

NEXT 28D BEAM CAMBER AT MIDSPAN (in.)

FROM JPC CAMBER ESTIMATE AND PCI DESIGN HANDBOOK MULTIPLIERS, ESTIMATED CAMBER AND DEFLECTIONS AT MIDSPAN ARE AS FOLLOWS:

	TRANSFER	MULTIPLIER	ERECTION*	MULTIPLIER	FINAL
PRESTRESS	+ 0.75"	1.80	+ 1.35"	2.45	+ 1.84"
BEAM DEAD LOAD	- 0.22"	1.85	- 0.41"	2.70	- 0.59"
SUBTOTAL	+ 0.53"		+ 0.94"		+ 1.24"
CAMBER ALLOWANCE	± 3/4"		± 3/4"		± 3/4"
MINIMUM ALLOWABLE CAMBER**	- 0.22"		+ 0.19"		+ 0.49"
MAXIMUM ALLOWABLE CAMBER**	+ 1.28"		+ 1.69"		+ 1.99"

- * ERECTION TIME STEP IS 30-60 DAYS AFTER RELEASE.
- ** IF MEASURED CAMBERS EXCEED THESE VALUES THE JPC CAMBER GROWTH RESTRAINING PROGRAM SHALL BE USED. THIS PROGRAM CONSISTS OF PLACING (10) 2-TON OF BLOCKS AT MIDSPAN OF THE BEAM FOR EACH 1/4" THE MEASURED CAMBER EXCEEDS THE MAXIMUM ALLOWABLE CAMBER. A MAXIMUM OF (10) EA. BLOCKS (2-TONS) MAY BE CONSERVATIVELY PLACED WITHOUT EXCEEDING BEAM STRESSES.

NOTE: LIMIT DIFFERENTIAL CAMBER BETWEEN BEAMS OF SIMILAR DESIGN TO 1/2". IF MEASURED CAMBERS EXCEED THIS VALUE THE JPC CAMBER GROWTH RESTRAINING PROGRAM SHALL BE USED.

MAKE CORRECTIONS NOTES

REJECTED

REVISE & RESUBMIT

SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

DATE 03/06/20 BY

CHA CONSULTING, INC.
Paul Lusitani

GENERAL NOTES

- 1. CONCRETE DESIGN STRENGTH: f'c = 8,000 PSI f'ci = 6,500 PSI
- REINFORCING STEEL SHALL BE GR-75, AND SHALL BE STAINLESS STEEL, AS NOTED.
- . PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203), AND SHALL CONSIST OF UNCOATED 0.60" ϕ x 270 KSI 7 WIRE LOW RELAXATION STRANDS.
- 4. PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF **44 K** AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION, (SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS
- 5. ENDS OF PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF BEAM (UNLESS NOTED OTHERWISE, SEE BEAM DETAILS).
- . THE TOPS OF THE BEAMS SHALL RECEIVE A SMOOTH FLOAT FINISH, UNLESS OTHERWISE SPECIFIED WITH A TRANSVERSE RAKE FINISH ROUGHENED TO 1/4" AMPLITUDE.
- 7. BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING INSERTS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL AND VERTICAL FORCES ARE APPLIED TO EACH OF THE TWO LIFTING INSERTS AT EACH END OF THE BEAM. BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE BEAM ENDS, UNLESS APPROVED BY J.P. CARRARA \$ SONS, INC.
- 8. <u>DESIGN MIX</u>: J.P.C. BRIDGE MIX #435M
- 9. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS AND MAINE D.O.T. J.P. CARRARA \$ SONS, INC. IS A PCI CERTIFIED PLANT.
- 10. CURING METHOD:

 MOISTURE \$ HEAT RETENTION. AS SOON AS THE TOP OF THE BEAMS ARE FINISHED AN INSULATED TARP WILL BE PLACED OVER THE BEAMS IN A MANNER THAT WILL NOT DISTURB THE SMOOTH FLOAT FINISH. THE INTERNAL CONCRETE AND AMBIENT ENCLOSURE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED. THE DATA AND GRAPH FROM THE SENSORS SHALL BE MARKED WITH THE CASTING DATE AND THE LOCATION OF THE RECORDER AND PROVIDED TO THE QA INSPECTOR. IF UNITS ACHIEVE 80% OF THE SPECIFIED DESIGN STRENGTH (6,400 PSI) AND THE INTERNAL CONCRETE TEMPERATURE IS GREATER THAN 120°F FOR A MINIMUM OF 8 HOURS, NO FURTHER CURING IS REQUIRED. IF BOTH OF THESE REQUIREMENTS ARE NOT SATISFIED, THE UNITS SHALL BE MOIST CURED AND PROTECTED FROM TEMPERATURES BELOW 50°F UNTIL THE DESIGN STRENGTH IS ACHIEVED.
- I. THE FABRICATION ENGINEER WILL BE NOTIFIED IN A TIMELY MANNER PRIOR TO START. 3 WEEKS MINIMUM NOTICE REQUIRED SO THAT ALL PRECAST OPERATIONS MAY BE WITNESSED.
- 12. NO INSERTS SHALL BE FIELD INSTALLED IN BEAMS.
- 13. A RETARDER SHALL BE PLACED ON THE FORMS PRIOR TO CASTING THE BEAMS ONLY IN THE AREAS WHERE THE PRECAST BEAM WILL BE BONDED TO THE CLOSURE POUR CONCRETE. AFTER CURING AND AFTER THE FORMS ARE REMOVED, THE EDGES SHALL RECEIVE A POWER WASH TO REMOVE THE RESIDUE FROM THE RETARDER. THE SURFACE SHOULD THEN EXHIBIT A PITTED SURFACE WITH SOME EXPOSED AGGREGATE PROVIDING AN IMPROVED BONDING SURFACE.
- 14. EXTERIOR FACIA BEAMS SHALL HAVE A CONCRETE RUBBED FINISH PER MAINE DOT SPEC. 502.13D.2.
- 15. THE BEAMS SHALL BE ORIENTED AND ERECTED WITH THE MARK-END AS SHOWN ON PLANS.

EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING

PER PCI MNL. 116, SECTION 5.2 (NOT TO BE USED FOR CONSTRUCTION)

SIZE # GRADE: 0.60" \$\phi \times 270 KSI

AREA: 0.217 IN^2

TENSION: 44,000 LBS. EACH STRAND

GRIP TO GRIP: 250'-0" = 250.0'

Es = 28,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE: $\Delta = PL = (44,000 - 3,000) \times 250.0 \times 12 = 19.82$

THEREFORE: TOLERANCES: ± 5%

 \triangle UPPER LIMIT = 1.05 x 19.82" = 20.81" = 20 13/16"

 \triangle LOWER LIMIT = 0.95 x 19.82" = 18.83" = 18 13/16" EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:

 $\triangle P = 0.5 \times 41,000 = 1,034 LBS.$

TOTAL TENSIONING FORCE = 44,000 + 1,034 = 45,034 LBS.

STRAND TENSIONING PROCEDURE:

- 1. PULL EACH STRAND INITIALLY TO 3,000 LBS. AND MARK STRAND.
- 2. THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,034* LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 18 13/16"* AND 20 13/16"*.

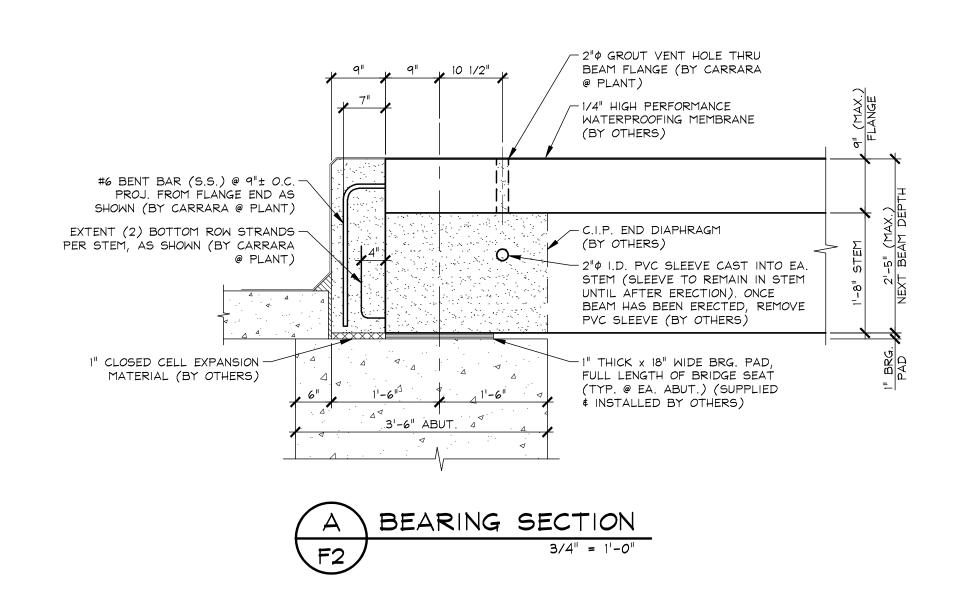
 * NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.
- 3. STRAND TENSIONING SEQUENCE IS GENERALLY REVERSE OF DETENSIONING SEQUENCE IN DRAWINGS.
- 4. STRANDS IN BOTTOM TWO ROWS SHALL BE RE-PULLED TO VERIFY SHORTENING EFFECT OF SELF STRESSING BED. RE-PULL SHALL NOT INCLUDE OVER-PULL FOR SHORTENING.
- 5. MARK ALL STRANDS ON ALL BEAMS FOR SLIPPAGE PRIOR TO DETENSIONING.
- 6. STRANDS SHALL BE DETENSIONED WITH A TORCH PER SEQUENCE IN DETENSIONING SCHEDULE SHOWN ON THE SHOP DRAWINGS.

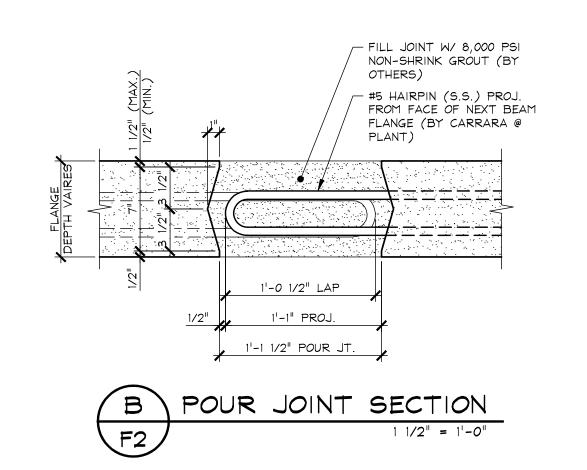
1 3-3-20 REVISED AS NOTED

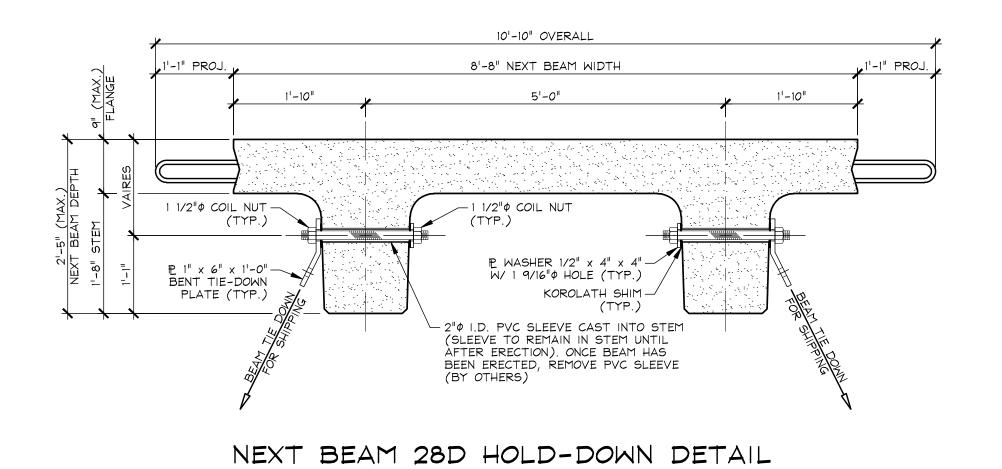
	77 0 0 20 11211025 710 110 125			
APPROVAL STAMP:		J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010	N.F. LUCE, INC CONTRACTOR ANSON, MAINE	
		STATE OF MAINE DEPARTMENT OF TRANSPORTATION	DATE: JAN.	. 27, 2020
	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SCALE:	NOTED	
		ICE HOUSE BRIDGE OVER GILMAN BROOK RIVER ROAD/ROUTE 8/ROUTE 201A ANSON, SOMERSET COUNTY BRIDGE NO.: 3726 PROJECT NO.: STP-2165(700)		DFTM: B.
				23577-020
		SUPERSTRUCTURE PLAN \$ TRANSVERSE SECTION	DWG. NO:	F1

F:\Maine-Bridges\23577-20 Ice House Bridge\23577-F1.dwg, 3/3/2020 1:58:31 PM









FOR SHIPPING

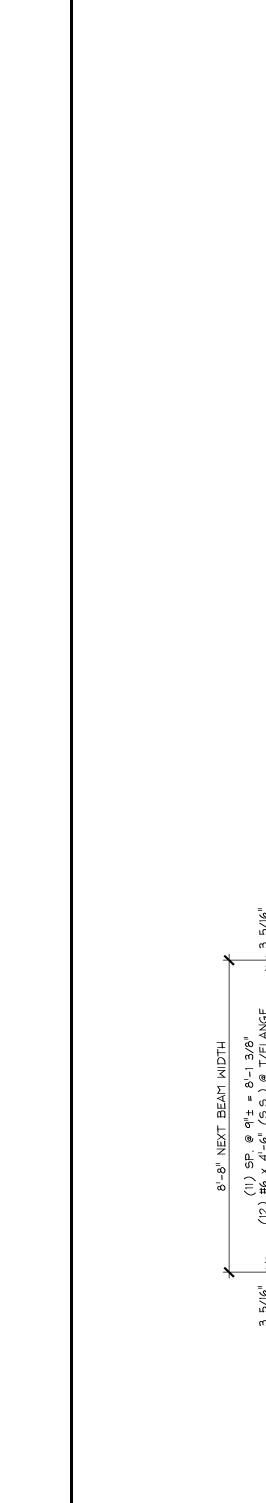
NO EXCEPTIONS TAKEN IN MAKE CORRECTIONS NOTES

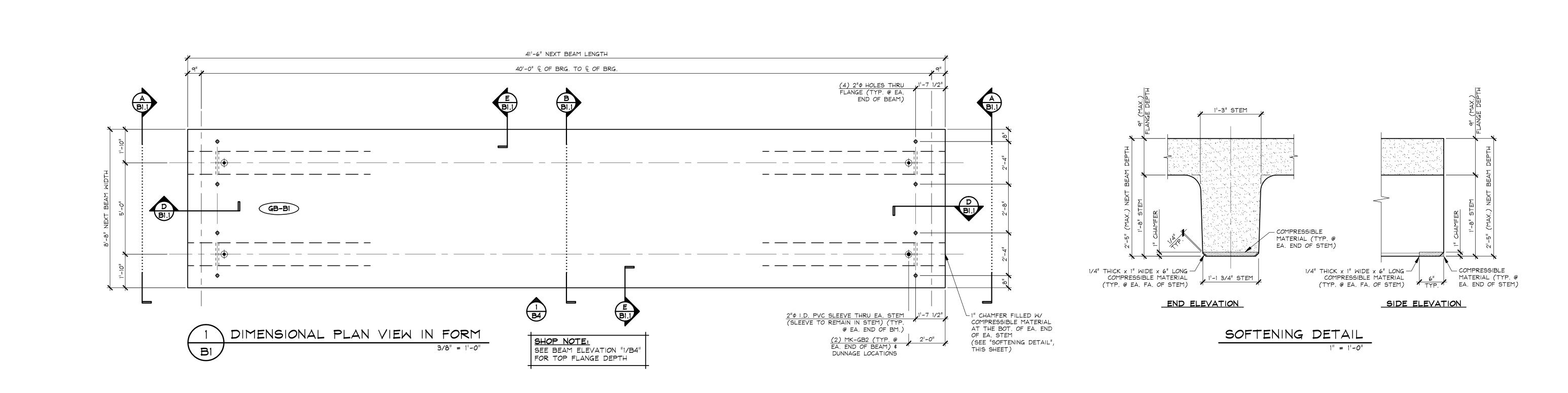
REJECTED IREVISE & RESUBMIT

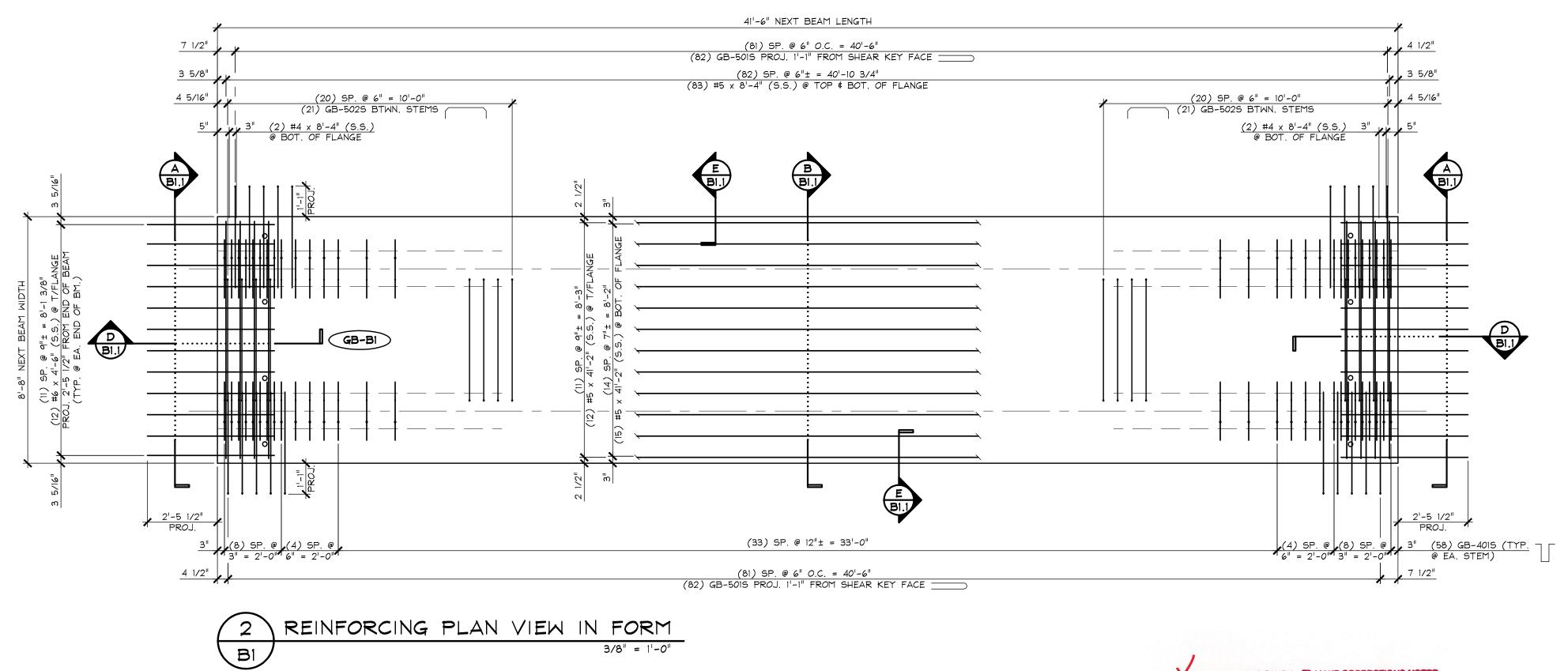
CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

DATE 03/06/20 SY CHA CONSULTING, INC. Paul Lusitani

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010		N.F. LUCE, INC. CONTRACTOR ANSON, MAINE	
STATE OF MAINE DEPARTMENT OF TRANSPORTATION -		DATE: JAN.	27, 2020	
		SCALE: N	NOTED	
	ICE HOUSE BRIDGE OVER GILMAN BROOK RIVER ROAD/ROUTE 8/ROUTE 201A ANSON, SOMERSET COUNTY BRIDGE NO.: 3726 PROJECT NO.: STP-2165(700)		DFTM: B.L.	
			23577-020	
	SECTIONS & SHIPPING DETAILS	DWG. NO:	F2	







			& SONS INC.	N.F. LUCE
	15			
	14	MK-GB2	DAYTON 20 TON x 19 3/4" SWIFT LIFT LIFTER (S.S.)	
	13		2"Φ I.D. x 1'-2 1/2" PVC SLEEVE	
	12			
	11			
	10		#6 x 4'-6" (STAINLESS STEEL)	
	9			
	8		#5 x 8'-4" (STAINLESS STEEL)	
	7		#5 x 41'-2" (STAINLESS STEEL) W/ 2'-6" STAGGERED LAP	
	6	GB-502S	#5 BENT BAR (STAINLESS STEEL)	
	5	GB-501S	#5 HAIRPIN (STAINLESS STEEL)	
	4			
	3		#4 x 8'-4" (STAINLESS STEEL)	
	2	GB-402S	#4 BENT BAR (STAINLESS STEEL)	
	1	GB-4015	#4 BENT BAR (STAINLESS STEEL)	

GB-B1 QTY.: 2 WT.:

ITEM MARK

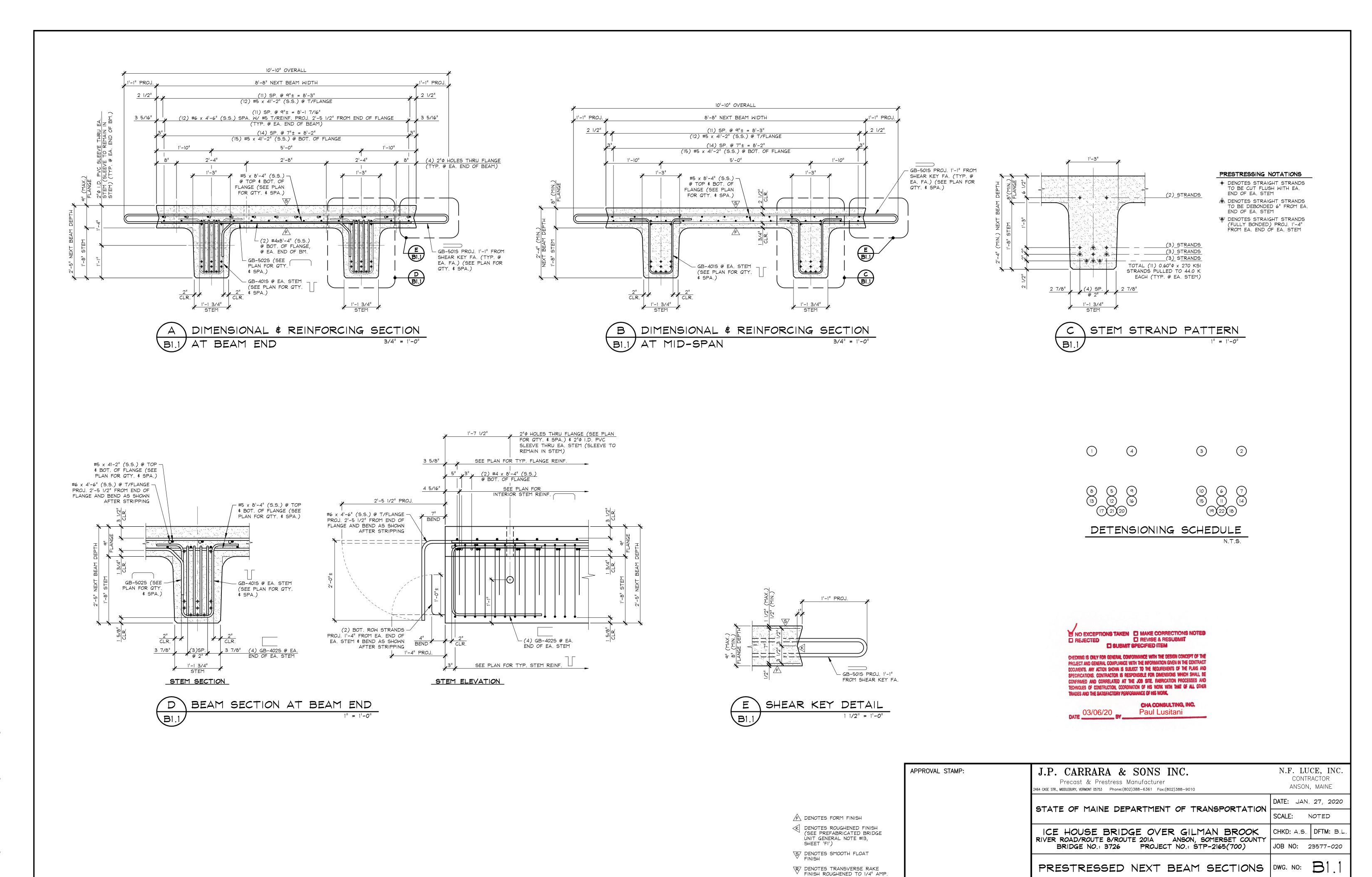
MATERIAL LIST / NEXT BEAM

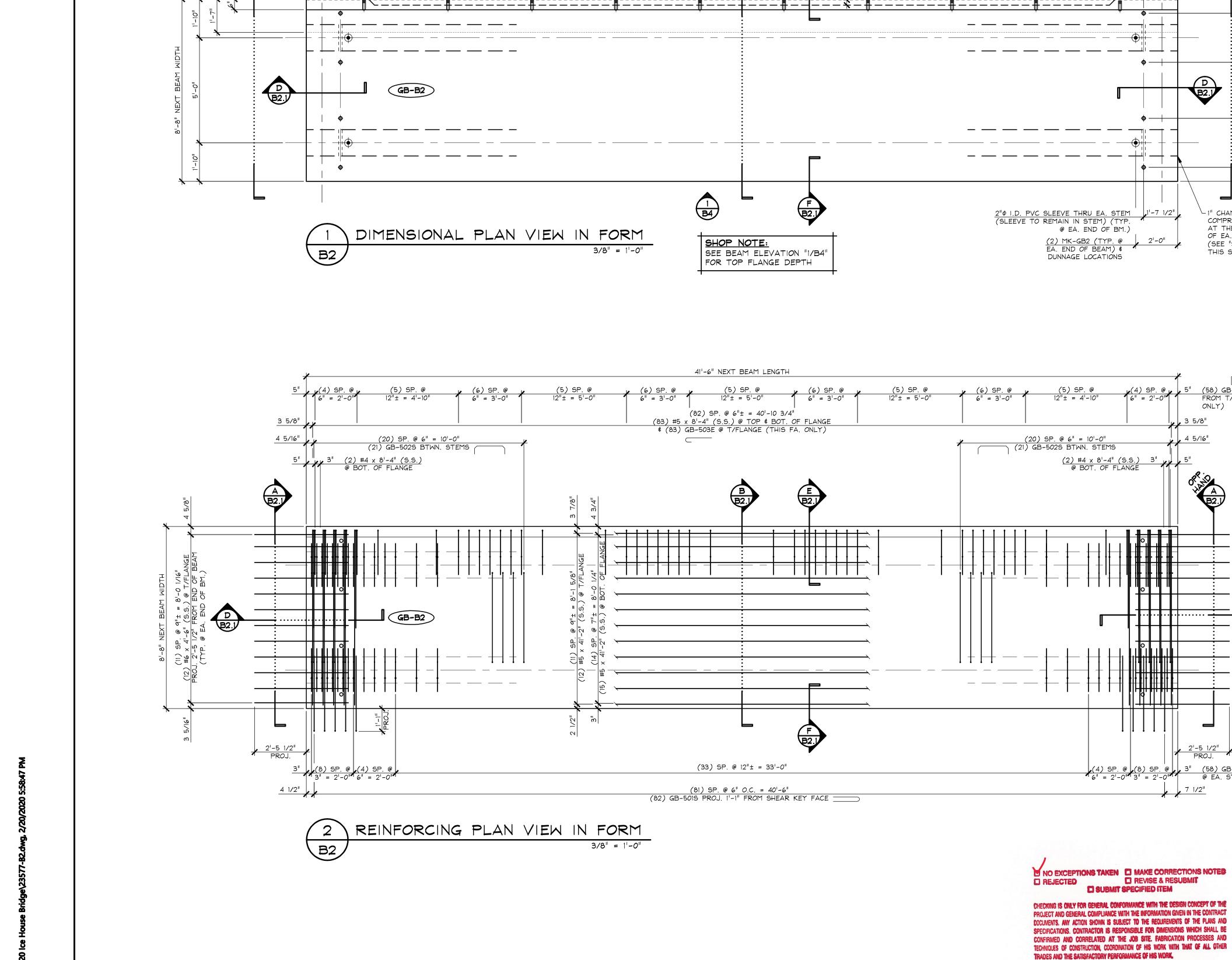
DESCRIPTION

30.51 T VOL.: 15.07 cy

	FORMANCE WITH THE DESIGN CONCEPT OF THE
CHICA AND CENEDAL CONDITIONS	WITH THE INFORMATION GIVEN IN THE CONTRACT
CUEUT AND GENERAL COMPLIANCE	BJECT TO THE REQUIREMENTS OF THE PLANS AND
CONCRETE. PART PORTURE SHOWING TO SE	SPONSIBLE FOR DIMENSIONS WHICH SHALL BE
MEIDMED AND CORRELATED AT	THE JOB SITE. FABRICATION PROCESSES AND
MANIOUES OF CONSTRUCTION COORD	INATION OF HIS WORK WITH THAT OF ALL OTHER
ADES AND THE SATISFACTORY PERI	ORMANCE OF HIS WORK.

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010	N.F. LUCE, INC. CONTRACTOR ANSON, MAINE	
	CTATE OF MAINE DEPARTMENT OF TRANSPORTATION		. 27, 2020
	ICE HOUSE BRIDGE OVER GILMAN BROOK RIVER ROAD/ROUTE 8/ROUTE 201A ANSON, SOMERSET COUNTY	SCALE:	NOTED
		CHKD: A.S.	DFTM: B.L.
		JOB NO:	23577-020
	PRESTRESSED NEXT BEAM PLANS	DWG. NO:	B1





41'-6" NEXT BEAM LENGTH

40'-0" € OF BRG. TO € OF BRG.

(9) SP. @ 4'-0" O.C. = 36'-0" (10) MK-GBI (THIS FA. ONLY)

35'-6" EXTENT OF DRIP NOTCH

(4) 2"\$\phi\$ HOLES THRU FLANGE (TYP. @ EA. END OF BEAM)

'I" CHAMFER FILLED W/ COMPRESSIBLE MATERIAL

OF EA. STEM

THIS SHEET)

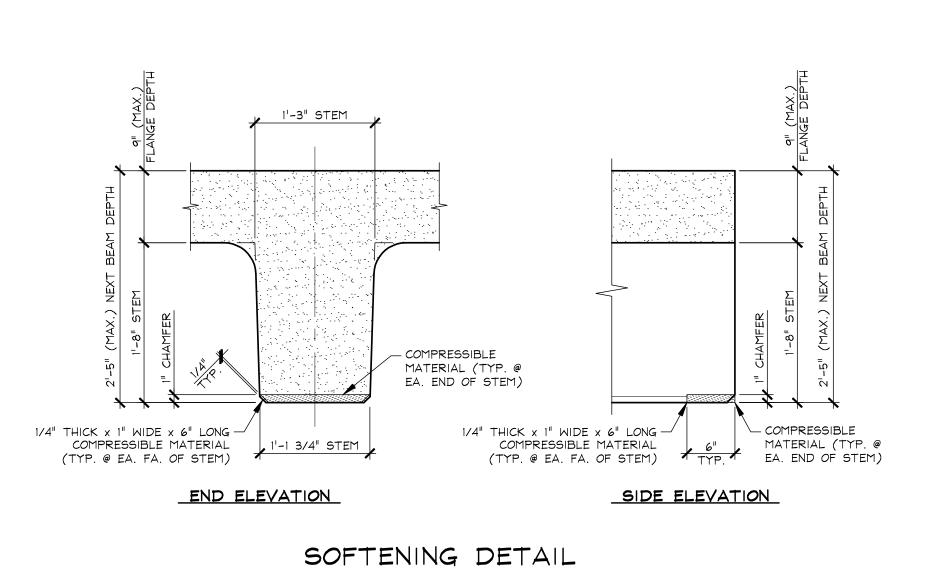
AT THE BOT. OF EA. END

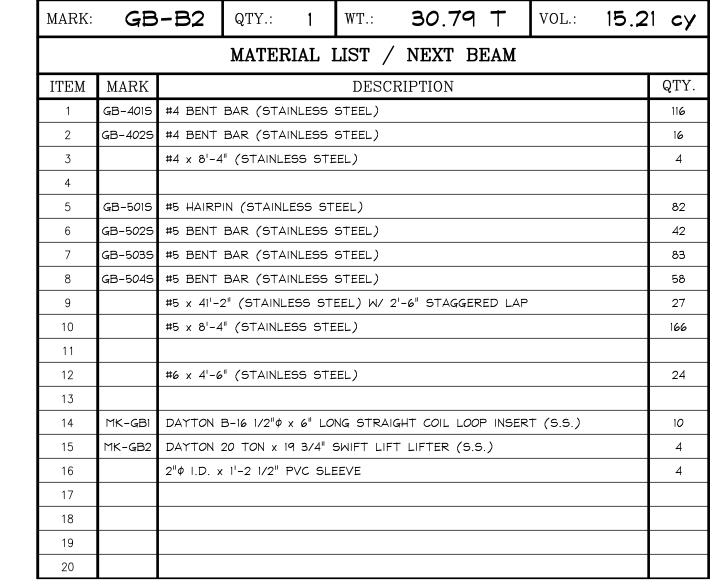
(SEE "SOFTENING DETAIL",

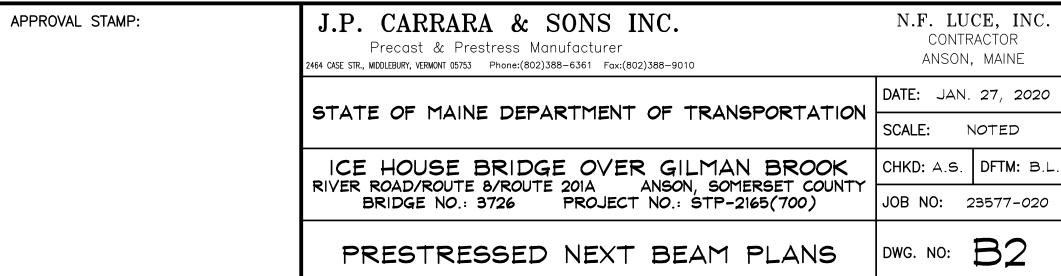
(58) GB-504S PROJ. 7 1/4" FROM T/FLANGE (THIS FA.

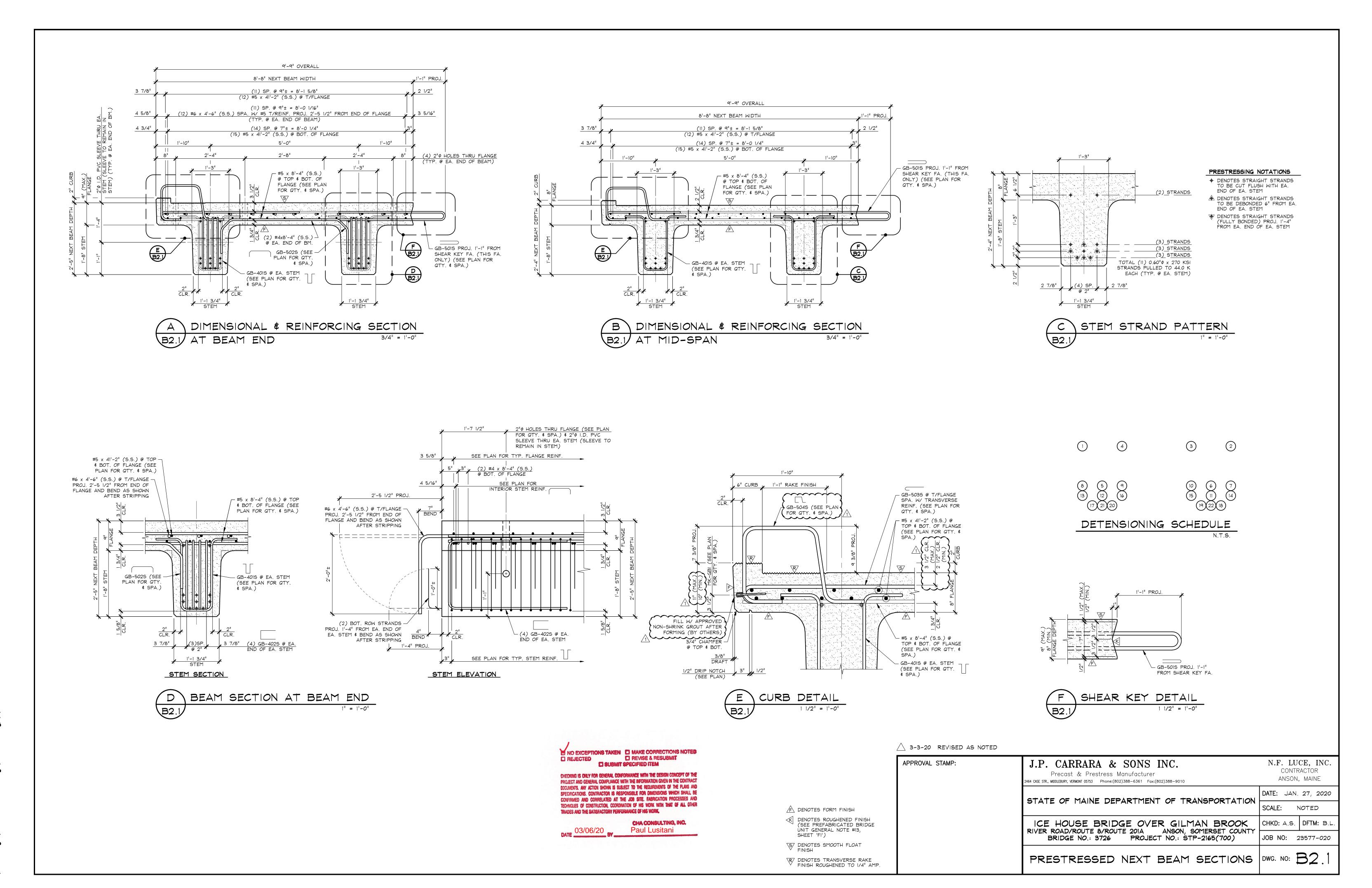
ONLY)

Paul Lusitani

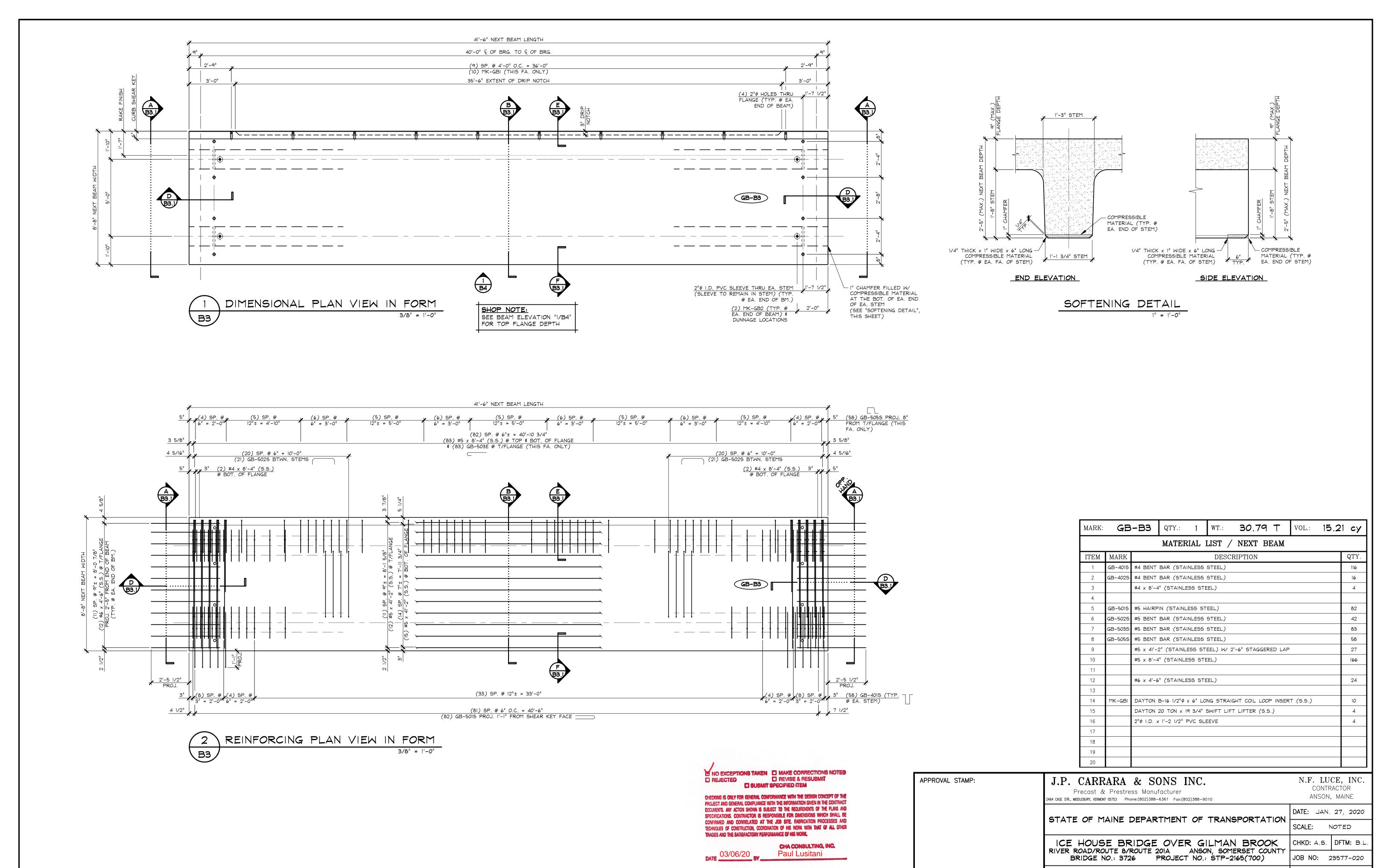






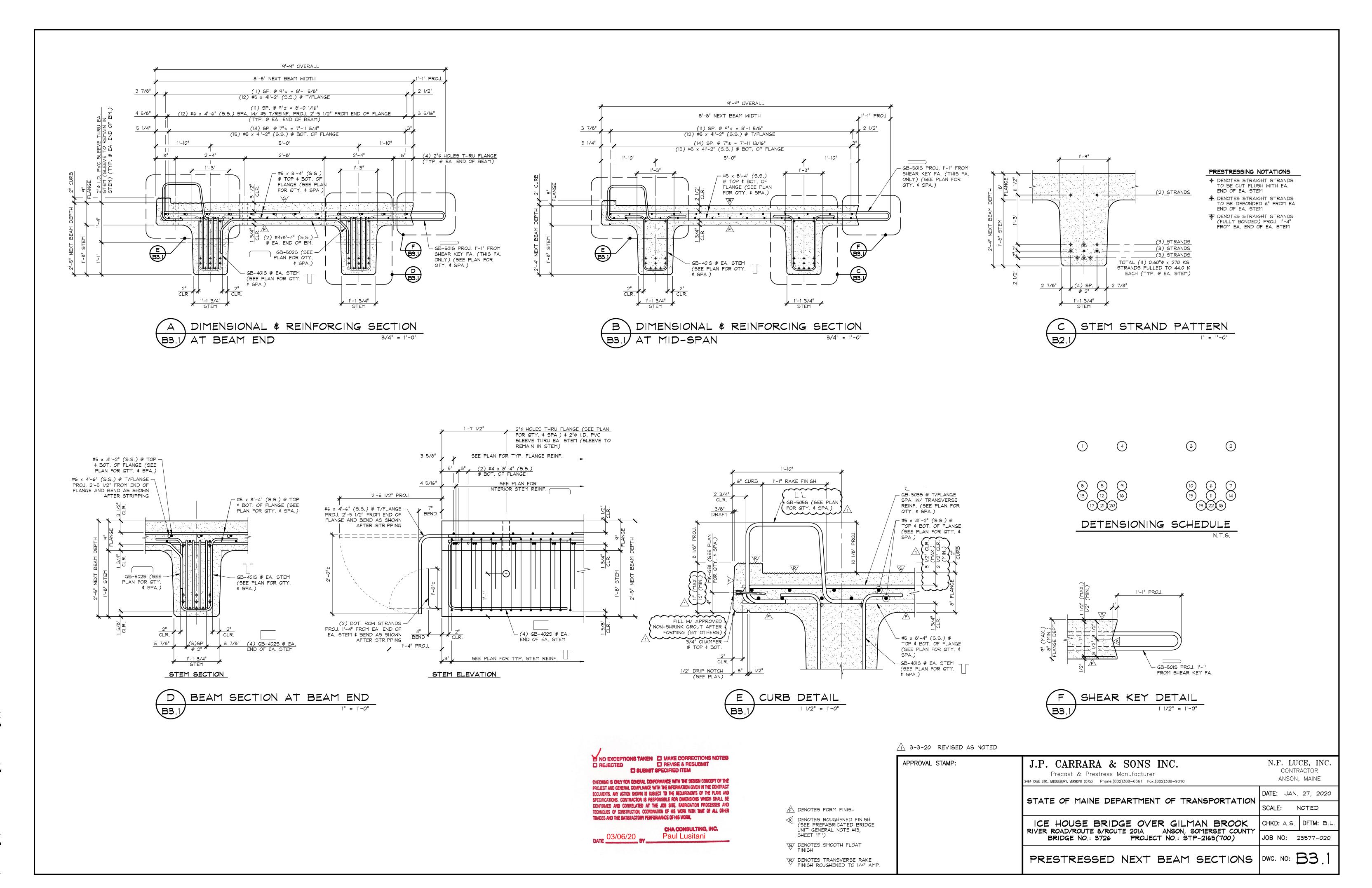


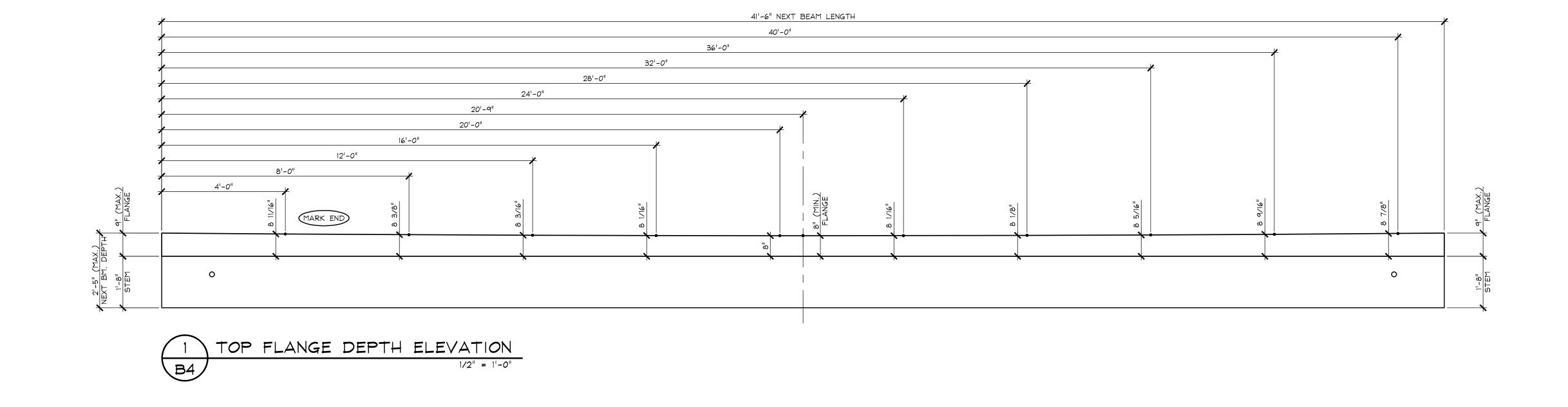




DWG. NO: B3

PRESTRESSED NEXT BEAM PLANS





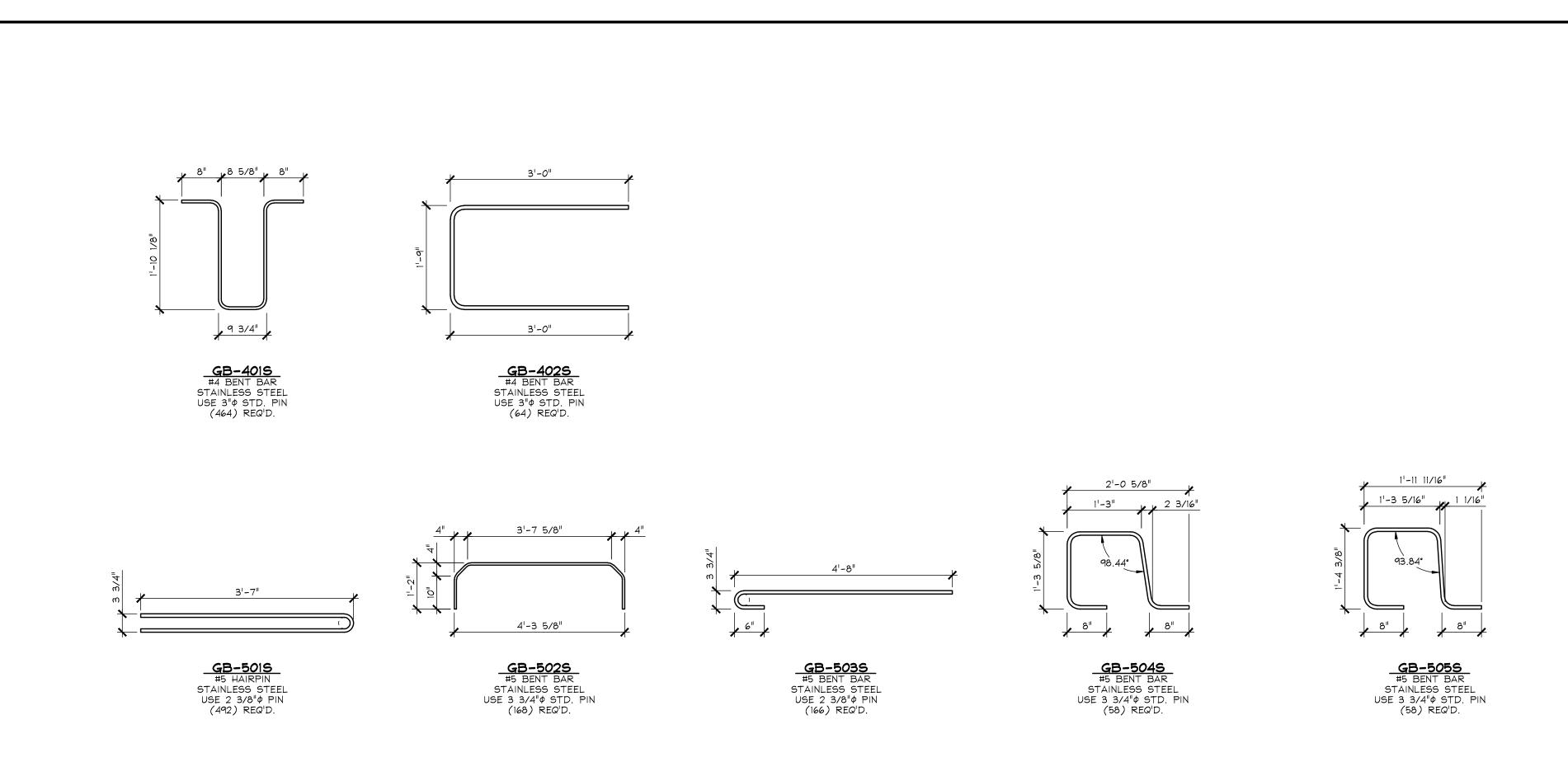
NO EXCEPTIONS TAKEN MAKE CORRECTIONS NOTES REJECTED REVISE & RESUBMIT REVISE & RESUBMIT SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. MY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

DATE 03/06/20 SY CHA CONSULTING, INC. Paul Lusitani

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010	N.F. LUCE, INC. CONTRACTOR ANSON, MAINE	
	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	DATE: JAN. 27, 2020	
	STATE OF TRAINE DEFARTHER OF TRAINSFORTATION	SCALE: NOTED	
	ICE HOUSE BRIDGE OVER GILMAN BROOK RIVER ROAD/ROUTE 8/ROUTE 201A ANSON, SOMERSET COUNTY	CHKD: A.S. DFTM: B.L.	
	BRIDGE NO.: 3726 PROJECT NO.: STP-2165(700)	JOB NO: 23577-020	
	TOP FLANGE DEPTH ELEVATION	DWG. NO: B 4	





NO EXCEPTIONS TAKEN MAKE CORRECTIONS NOTES
REJECTED REVISE & RESUBMIT
SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT

DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH THAT OF ALL OTHER

TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

DATE 03/06/20 Paul Lusitani

MISCELLANEOUS MATERIALS ITEM MARK QTY. DESCRIPTION REMARKS MK-GBI STAINLESS STEEL DAYTON B-16 1/2" ϕ x 6" LONG STRAIGHT COIL LOOP INSERT DAYTON 20 TON x 19 3/4" SWIFT LIFT LIFTER STAINLESS STEEL MK-GB2 16 #4 x 8'-4" (STAINLESS STEEL) 108 #5 x 41'-2" (STAINLESS STEEL) W/ 2'-6" STAGGERED LAP #5 x 8'-4" (STAINLESS STEEL) 96 #6 x 4'-6" (STAINLESS STEEL) 16 2"Φ I.D. x 1'-2 1/2" PVC SLEEVE 13 14

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010	N.F. LUCE, INC. CONTRACTOR ANSON, MAINE	
	CTATE OF MAINE DEPARTMENT OF TRANSPORTATION		
	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SCALE: NOTED	
	RIVER ROAD/ROUTE 8/ROUTE 201A ANSON, SOMERSET COUNTY	CHKD: A.S. DFTM: B.L.	
		JOB NO: 23577-020	
	MATERIALS LIST	DWG. NO:	